SPEC® CINT2006 Result
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SGI

SGI Altix XE 320 (Intel Xeon E5472, 3.00 GHz)

SPECint®_rate2006 = 142

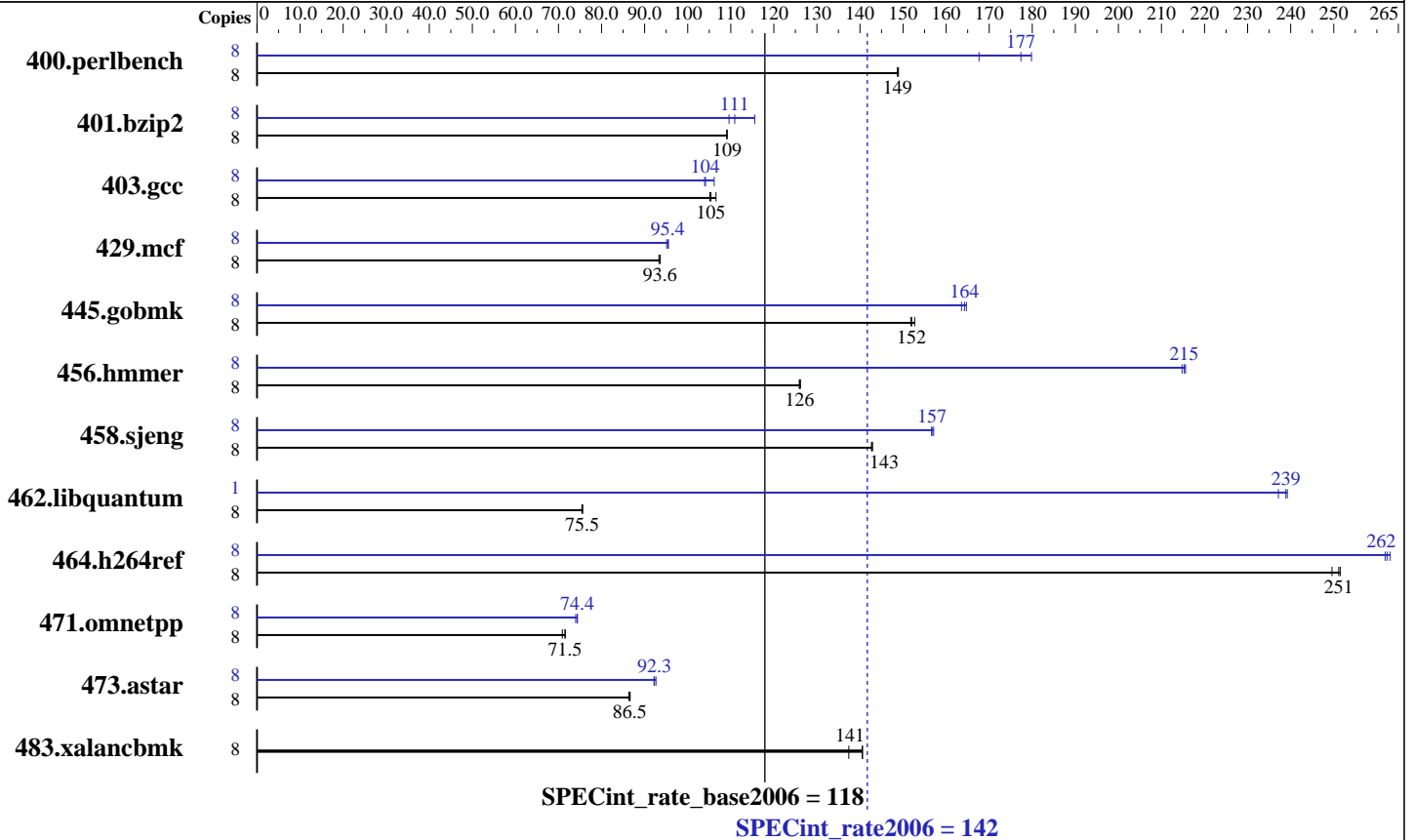SPECint_rate_base2006 = 118

CPU2006 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: May-2008

Hardware Availability: Feb-2008

Software Availability: Apr-2008

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Hardware

CPU Name: Intel Xeon E5472

CPU Characteristics: Quad Core, 3.0 GHz

CPU MHz: 2992

FPU: Integrated

CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip

CPU(s) orderable: 1,2 chips

Primary Cache: 32 KB I + 32 KB D on chip per core

Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

L3 Cache: None

Other Cache: None

Memory: 16 GB (8*2GB PC2-6400 CL5-5-5 FB-DIMMs)

Disk Subsystem: 1 x 250 GB SATA (Hitachi Deskstar 7200rpm)

Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1 Kernel 2.6.16.46-0.12-smp

Compiler: Intel C++ and Fortran Compiler for Linux Version 10.1, Build 20070913

Auto Parallel: Yes

File System: xfs

System State: Multi-user, run level 3

Base Pointers: 32-bit

Peak Pointers: 32/64-bit

Other Software: SGI ProPack 5 for Linux Service Pack 5 Binutils 2.17 SmartHeap library V8.1

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Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	526	149	525	149	**525**	**149**	8	466	168	**441**	**177**	435	180
401.bzip2	8	707	109	**707**	**109**	708	109	8	**696**	**111**	704	110	668	116
403.gcc	8	604	107	612	105	**611**	**105**	8	607	106	620	104	**618**	**104**
429.mcf	8	**780**	**93.6**	782	93.3	779	93.6	8	**765**	**95.4**	767	95.1	764	95.5
445.gobmk	8	550	153	553	152	**552**	**152**	8	**511**	**164**	509	165	513	164
456.hmmer	8	593	126	**593**	**126**	592	126	8	346	216	**347**	**215**	348	215
458.sjeng	8	677	143	**678**	**143**	679	143	8	**618**	**157**	618	157	616	157
462.libquantum	8	2197	75.4	**2194**	**75.5**	2193	75.6	1	86.6	239	87.4	237	**86.7**	**239**
464.h264ref	8	709	250	704	252	**705**	**251**	8	676	262	**675**	**262**	673	263
471.omnetpp	8	705	70.9	699	71.6	**699**	**71.5**	8	672	74.4	**672**	**74.4**	676	74.0
473.astar	8	**649**	**86.5**	648	86.6	651	86.3	8	**609**	**92.3**	609	92.2	606	92.6
483.xalancbmk	8	402	137	393	141	**393**	**141**	8	402	137	393	141	**393**	**141**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

General Notes

```
BIOS settings:
  Snoop Filter:           Enabled
  Hardware Prefetcher:     Enabled
  Adjacent Sector Prefetch: Disabled
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
The taskset utility was used to bind processes to cores
Parallel settings for 462.libquantum peak:
  OMP_NUM_THREADS = 8
  KMP_AFFINITY = physical,0
  KMP_STACKSIZE = 64M
```

Base Compiler Invocation

C benchmarks:
```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

C++ benchmarks:
```
/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

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Base Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:

```
-fast -inline-calloc -opt-malloc-options=3
```

C++ benchmarks:

```
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs -lsmartheap
```

Base Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

```
    401.bzip2: /sw/sdev/intel-cc/x86_64/10.1.008/bin/icc
            -L/sw/sdev/intel-cc/x86_64/10.1.008/lib
            -I/sw/sdev/intel-cc/x86_64/10.1.008/include
```

```
    456.hmmer: /sw/sdev/intel-cc/x86_64/10.1.008/bin/icc
            -L/sw/sdev/intel-cc/x86_64/10.1.008/lib
            -I/sw/sdev/intel-cc/x86_64/10.1.008/include
```

C++ benchmarks:
```
/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
  401.bzip2: -DSPEC_CPU_LP64
  456.hmmer: -DSPEC_CPU_LP64
```

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Peak Portability Flags (Continued)

```
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
    400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias
                   -prefetch

       401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch

         403.gcc: -fast -inline-calloc -opt-malloc-options=3

         429.mcf: -fast -prefetch

       445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xT -O2 -ipo
                   -no-prec-div -ansi-alias

       456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive

       458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

    462.libquantum: -fast -unroll4 -Ob0 -prefetch
                   -opt-streaming-stores always -vec-guard-write
                   -opt-malloc-options=3 -parallel -par-runtime-control

      464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
                   -ansi-alias
```

C++ benchmarks:

```
     471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
                   -no-prec-div -ansi-alias -opt-ra-region-strategy=block
                   -Wl,-z,muldefs -lsmartheap

       473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
                   -no-prec-div -ansi-alias -opt-ra-region-strategy=routine
                   -Wl,-z,muldefs -lsmartheap

   483.xalancbmk: basepeak = yes
```

Peak Other Flags

C benchmarks:

Continued on next page

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Peak Other Flags (Continued)

403.gcc: -Dalloca=_alloca

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.04.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.04.xml`

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